

We Claim:

- 1 1. A test apparatus for testing integrated modules, comprising a carrier
2 substrate, the carrier substrate having a plurality of connection locations are arranged
3 thereon, the connection locations being designed such that an integrated module is
4 connected to a test unit connected to the carrier substrate via a connection location, the
5 connection locations forming a connection array, the connection locations being arranged
6 in groups within the connection array;
7 a data terminal provided for each connection location, the data terminals of
8 connection locations of a respective group being connected to a respective different data
9 bus;
10 a control terminal provided for each connection location, the control terminal
11 selecting the integrated module for a test, the control terminals of connection locations of
12 a respective group being connected to a control bus assigned to this group; and
13 an address and command terminal provided for each connection location, the
14 address and command terminals of connection locations of a respective group being
15 connected to an address and command bus via a respective switching means, which is
16 assigned to the respective group and controlled by the control bus assigned to this group.

1 2. The test apparatus as claimed in claim 1, wherein the connection locations are
2 arranged in rows and columns within the connection array,

3 the data terminals of connection locations of a respective column are connected to
4 a data bus assigned to this column,
5 the control terminals of connection locations of a respective row are connected to
6 a control bus assigned to this row, and
7 the address and command terminals of connection locations of a respective row
8 are connected to a common address and command bus via a respective switching means,
9 which may be controlled by the control bus assigned to this row.

1 3. The test apparatus as claimed in claim 1, wherein the carrier substrate is in
2 the form of a burn-in test board.

1 4. A method for operating a test apparatus, the test apparatus including at least
2 some connection locations on the carrier substrate being connected to integrated modules
3 to be tested, the method comprising:
4 driving corresponding control bus(es) to simultaneously operate and drive
5 modules of a number of groups of connection locations, wherein the number is less than
6 the number of groups present on the carrier substrate; and
7 in simultaneously operating the modules of the number of groups, the groups
8 being connected to the address and command bus via the respective switching means.

1 5. The method as claimed in claim 4, wherein the connection locations are
2 arranged in rows and columns within the connection array and the modules of a number

3 of rows are simultaneously operated and driven, the number being smaller than the
4 number of rows present on the carrier substrate, and
5 the modules of the number of rows which are simultaneously operated are
6 connected to the address and command bus via the respective switching means.

1 6. The method as claimed in claim 4, wherein the modules which interchange
2 data via the assigned data bus are operated and driven.

1 7. The method as claimed in claim 4, wherein the modules are subject to a
2 functional test and beforehand and/or afterward to a burn-in test on the same carrier
3 substrate.

1 8. The method as claimed in claim 7, wherein the modules are operated at a first
2 operating frequency in the burn-in test and at a second operating frequency in the
3 functional test, the first operating frequency being smaller than the second operating
4 frequency.

1 9. The method as claimed in claim 7, wherein, during a burn-in test, driving the
2 corresponding control buses simultaneously operates the modules of all groups, and
3 the modules of the groups are connected to the address and command bus via the
4 respective switching means.

1 10. A test apparatus for testing integrated modules, comprising a carrier
2 substrate, the carrier substrate having a plurality of connection locations are arranged
3 thereon, the connection locations being designed such that an integrated module is
4 connected to a test unit connected to the carrier substrate via a connection location, the
5 connection locations forming a connection array, the connection locations being arranged
6 in groups within the connection array;
7 a data terminal provided for each connection location, the data terminals of
8 connection locations of a respective group being connected to a respective different data
9 bus;
10 a control terminal provided for each connection location, the control terminal
11 selecting the integrated module for a test, the control terminals of connection locations of
12 a respective group being connected to a control bus assigned to this group; and
13 an address and command terminal provided for each connection location, the
14 address and command terminals of connection locations of a respective group being
15 connected to an address and command bus via a respective switch, which is assigned to
16 the respective group and controlled by the control bus assigned to this group.

1 11. The test apparatus as claimed in claim 10, wherein the connection
2 locations are arranged in rows and columns within the connection array,
3 the data terminals of connection locations of a respective column are connected to
4 a data bus assigned to this column,
5 the control terminals of connection locations of a respective row are connected to
6 a control bus assigned to this row, and

7 the address and command terminals of connection locations of a respective row
8 are connected to a common address and command bus via a respective switch, which may
9 be controlled by the control bus assigned to this row.

1 12. The test apparatus as claimed in claim 10, wherein the carrier substrate is in
2 the form of a burn-in test board.

1 13. A method for operating a test apparatus, the test apparatus including at least
2 some connection locations on the carrier substrate being connected to integrated modules
3 to be tested, the method comprising:

4 driving corresponding control bus(es) to simultaneously operate and drive
5 modules of a number of groups of connection locations, wherein the number is less than
6 the number of groups present on the carrier substrate; and
7 in simultaneously operating the modules of the number of groups, the groups
8 being connected to the address and command bus via the respective switch.

1 14. The method as claimed in claim 13, wherein the connection locations are
2 arranged in rows and columns within the connection array and the modules of a number
3 of rows are simultaneously operated and driven, the number being smaller than the
4 number of rows present on the carrier substrate, and
5 the modules of the number of rows which are simultaneously operated are
6 connected to the address and command bus via the respective switch.

1 15. The method as claimed in claim 13, wherein the modules which interchange
2 data via the assigned data bus are operated and driven.

1 16. The method as claimed in claim 13, wherein the modules are subjected to a
2 functional test and beforehand and/or afterward to a burn-in test on the same carrier
3 substrate.

1 17. The method as claimed in claim 16, wherein the modules are operated at a
2 first operating frequency in the burn-in test and at a second operating frequency in the
3 functional test, the first operating frequency being smaller than the second operating
4 frequency.

1 18. The method as claimed in claim 16, wherein during a burn-in test, driving the
2 corresponding control buses simultaneously operates the modules of all groups, and
3 the modules of the groups are connected to the address and command bus via the
4 respective switch.